

<b>EPA</b> United States Environmental Protection Agency Washington, DC 20460 <b>Work Assignment</b>						Work Assignment Number 2-04	
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:	
Contract Number EP-D-11-006		Contract Period   04/29/2011   To   03/28/2013 Base                      Option Period Number    1		Title of Work Assignment/SF Site Name Improving Emission Estimates			
Contractor EASTERN RESEARCH GROUP, INC.				Specify Section and paragraph of Contract SOW B			
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance  From   03/29/2012   To   03/28/2013	
Comments: This work assignment includes 100 hours for preparation of the work plan and to begin work on the work assignment. To the best of my knowledge, this work does not duplicate any work previously performed or currently being performed by this office.							
<input type="checkbox"/> Superfund                      Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund							
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.							
SFO (Max 2) <input type="checkbox"/>							
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)    (Cents)    Site/Project (Max 8)    Cost Org/Code (Max 7)
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Authorized Work Assignment Ceiling							
Contract Period:		Cost/Fee:		LOE: 0			
04/29/2011   To   03/28/2013							
This Action:				100			
Total:				100			
Work Plan / Cost Estimate Approvals							
Contractor WP Dated:		Cost/Fee:		LOE:			
Cumulative Approved:		Cost/Fee:		LOE:			
Work Assignment Manager Name    Laurel Driver  <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number    919-541-2859 FAX Number:	
Project Officer Name    Margaret Dougherty  <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number:    919-541-2344 FAX Number:	
Other Agency Official Name  <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: FAX Number:	
Contracting Official Name    Rodney-Daryl Jones  <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number:    919-541-3112 FAX Number:	

# **Statement of Work**

## **Improving C1/C2 Commercial Marine Activity and Emission Estimates**

**I. Contractor Name: ERG**  
**Contract #: EP-D-11-006**  
**WA #: 2-04**

**II. Work Assignment Manager (WAM):**  
WAM Name: Laurel Driver  
U.S. Environmental Protection Agency  
Office of Air Quality Standards and Planning  
Phone: (919) 541-2859

### **III. Background:**

Comparison of results from CMAQ modeling with ambient monitors has shown excessive emissions in several large ports. Comparison of NEI inventories with those developed by several large ports has shown that the inventories of commercial C1/C2 emissions used for the air quality modeling and for the NEI are roughly an order of magnitude larger than the local port authority inventories. EPA suspects that these differences are the result of the simplistic method of spatially allocating commercial C1/C2 emissions from national totals to local areas. In the case of commercial C1/C2, these allocations were allocated 75% in port and 25% underway. The in-port emissions were allocated to the 150 largest ports only on the basis of the cargo tonnage of these ports.

The purpose of this WA is to apply the previous work done by ERG and reported in “CATEGORY 2 VESSEL CENSUS, ACTIVITY, AND SPATIAL ALLOCATION ASSESSMENT AND CATEGORY 1 AND CATEGORY 2 IN-PORT/AT-SEA SPLITS,” February 16, 2007, and the accompanying database to produce spatial allocation factors suitable for air quality modeling and for the NEI. For short, this report is referred to below as the C2 Census Report.

### **IV Tasks**

#### **Task #1: Work Plan and Progress Review**

The Contractor shall develop a work plan. The work plan will identify methodologies for the various tasks below. The Contractor shall hold conference calls with the WAM as needed to plan and review progress of this WA.

#### **Task #2: Develop spatial allocation factors**

The contractor shall develop a methodology for going from the spatial allocation in the C2 Census Report to the shape files used in the Emission Inventory System (EIS). If necessary, additional shape IDs will be added to cover the allocations, for example in the Gulf of Mexico.

The contractor shall apply the methodology to produce the allocation factors.

The contractor shall develop and apply QA procedures to this work.

Product is

- set of allocation factors in format, as approved by OAQPS
- all supporting data, scripts, and custom software developed for this task
- a report explaining the methodology

### **Task #3: C1/C2 Emissions Estimates for 2011**

The contractor shall develop hazardous air pollutant estimates from national pollutant emission estimates for 2011 C1/C2 marine vessels provided by the WAM. The contractor shall allocate these emissions to port and underway shape IDs based on the allocation procedures developed in the previous task. The contractor shall provide all necessary fields for the WAM to submit to EIS. The contractor shall provide documentation of for this task.

## **V. Deliverables:**

The Contractor shall adhere to the following schedule:

<b>Task</b>	<b>Deliverable</b>	<b>Delivery Schedule</b>
1	Work Plan	20 days after effective date of WA
2	Draft Allocation Report	8 weeks after acceptance of work plan
3	Final Allocation Report and related files	2 weeks after receipt of EPA comments
4.	Emissions and Documentation	4 weeks after EPA comments

<b>EPA</b> United States Environmental Protection Agency Washington, DC 20460 <b>Work Assignment</b>						Work Assignment Number 2-04				
						<input type="checkbox"/> Other <input checked="" type="checkbox"/> Amendment Number: 000001				
Contract Number EP-D-11-006			Contract Period   04/29/2011   To   03/28/2013			Title of Work Assignment/SF Site Name				
			Base                      Option Period Number      1			Improving Emission Estimates				
Contractor EASTERN RESEARCH GROUP, INC.					Specify Section and paragraph of Contract SOW					
Purpose: <input type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input checked="" type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval					Period of Performance  From   04/01/2012   To   03/28/2013					
Comments: The work plan dated 05/01/12 has been reviewed and we concur with the labor mix, technical hours (407), ODCs, total estimated cost \$36,995 and completion date 03/31/13 as specified. Due to budgetary constraints the contractor shall not exceed costs of \$35,000 until authorized by a change in the WA. This document is IAW the CMM 7.3.5.1(D)										
<input type="checkbox"/> Superfund                      Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.										
SFO <input type="checkbox"/> (Max 2)										
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Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee:				LOE: 100				
04/29/2011   To   03/28/2013										
This Action:						307				
Total:						407				
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:				Cost/Fee:		LOE:				
Cumulative Approved:				Cost/Fee:		LOE:				
Work Assignment Manager Name    Laurel Driver						Branch/Mail Code:				
						Phone Number    919-541-2859				
_____ (Signature)                      (Date)						FAX Number:				
Project Officer Name    Margaret Dougherty						Branch/Mail Code:				
						Phone Number:    919-541-2344				
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Contracting Official Name    Rodney-Daryl Jones						Branch/Mail Code:				
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<b>EPA</b> United States Environmental Protection Agency Washington, DC 20460 <b>Work Assignment</b>						Work Assignment Number 2-04				
						<input type="checkbox"/> Other <input checked="" type="checkbox"/> Amendment Number: 000002				
Contract Number EP-D-11-006			Contract Period   04/29/2011   To   03/28/2013			Title of Work Assignment/SF Site Name				
			Base                      Option Period Number      1			Improving Emission Estimates				
Contractor EASTERN RESEARCH GROUP, INC.					Specify Section and paragraph of Contract SOW					
Purpose: <input type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input checked="" type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval					Period of Performance  From   04/01/2012   To   03/28/2013					
Comments: The purpose of this work change is the add two tasks as described in the attachment. The contractor shall submit a revised work plan. This document is IAW the CMM 7.3.5.1(D)										
<input type="checkbox"/> Superfund                      Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
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SFO <input type="checkbox"/> (Max 2)										
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Contract Period:		Cost/Fee:				LOE: 407				
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This Action:						0				
Total:						407				
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:				Cost/Fee:		LOE:				
Cumulative Approved:				Cost/Fee:		LOE:				
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						Phone Number    919-541-2859				
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Contracting Official Name    Rodney-Daryl Jones						Branch/Mail Code:				
						Phone Number: 919-541-3112				
_____ (Signature)                      (Date)						FAX Number:				

**Title: Improving Emission Estimates**  
**Contractor Name: ERG**  
**Contract #: EP-D-11-006**  
**WA: 2-04 Change 2**

**Additional Tasks:**

Task #4:

The contractor shall develop hazardous air pollutant estimates from national pollutant emission estimates for 2011 C3 marine vessels provided by the WAM. By technical direction from the WAM, in consultation with EPA's Office of Transportation and Air Quality (OTAQ), the contractor shall allocate these emissions to port and underway shape IDs based on the allocation procedures. The contractor shall provide all necessary fields for the WAM to submit to EIS. The contractor shall provide documentation for this task.

Task #5:

The contractor shall compile Aircraft exhaust, ground support, and auxiliary power unit emission of criteria and hazardous air pollutants for the base year 2011, using FAA's EDMS model and emissions factors provided by EPA OTAQ. The contractor shall provide all necessary fields for the WAM to submit to EIS. The contractor shall provide documentation for this task.

Work Assignment Form, (WebForms v1.0)

**Title: Improving Emission Estimates**  
**Contractor: Eastern Research Group**  
**Contract Number: EP-D-11-006**  
**WA 2-04, Change 3**

**Task #6: Assist State/Local agencies in creating input files**

The contractor shall collect necessary modeling input files for an estimated four agencies each for NCD and CDB inputs. The contractor shall work directly with agencies to prepare these files from model runs the agencies have prepared and use these files to prepare inputs for the 2011 NEI runs of NMIM and MOVES. The contractor shall prepare the files in the proper format for submittal to EIS for the agencies to submit.

**Task #7: QA and preparation of state/local inputs to NONROAD national county database (NCD) and MOVES county database (CDB)**

The contractor shall collect the submitted NCD and CDB data from EPA's Emission Inventory System (EIS) for the 2011 NEI. The contractor shall run QA checks and consult with state/local agencies as necessary to prepare these inputs for NMIM NONROAD and MOVES runs for the 2011 NEI. The contractor shall provide documentation for the data collection, QA, and contents of the inputs.

**Task #8: NONROAD model runs via NMIM**

The contractor shall prepare NMIM NONROAD emissions for a single test case (a one-state run to compare to a national run, year to be determined) in order to assure methodology. The contractor shall also prepare a national run for year 2011 for the NEI for 50 US states and Puerto Rico and US Virgin Isles. The contractor shall deliver monthly emissions in SMOKE format as specified by the WAM. The contractor shall document run parameters for approval prior to run, using a template supplied by the WAM. The contractor shall provide documentation for the 2011 NEI on that base year's run.

<b>Deliverable</b>	<b>Due Date</b>
Monthly progress reports	Ongoing
Task 6: Input files	December 31, 2012
Task 7: QAed NCD/CDB national files	January 25, 2013
Task 8: Test Run	December 7, 2012
Task 8: 2011 NONROAD output	February 15, 2012
Task 8: 2011 NONROAD documentation	February 28, 2013



<b>EPA</b> United States Environmental Protection Agency Washington, DC 20460 <b>Work Assignment</b>						Work Assignment Number 2-04				
						<input type="checkbox"/> Other <input checked="" type="checkbox"/> Amendment Number: 000004				
Contract Number EP-D-11-006			Contract Period   04/29/2011   To   03/31/2014 Base <input checked="" type="checkbox"/> Option Period Number			Title of Work Assignment/SF Site Name				
Contractor EASTERN RESEARCH GROUP, INC.					Specify Section and paragraph of Contract SOW					
Purpose: <input type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input checked="" type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance  From   04/01/2012   To   03/31/2013				
Comments: This Work Assignment Change extends the Period of Performance to read:03/31/2013 in accordance with the Period of Performance end date of Option Period I.  This amendment is in accordance with CMM 7.3.5.1 (D)										
<input type="checkbox"/> Superfund                      Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
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Work Assignment Manager Name    Laurel Driver  <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>							Branch/Mail Code: Phone Number   919-541-2859 FAX Number:			
Project Officer Name    Karen C. Watson  <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>							Branch/Mail Code: Phone Number: 919-541-3114 FAX Number:			
Other Agency Official Name  <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>							Branch/Mail Code: Phone Number: FAX Number:			
Contracting Official Name    Rodney-Daryl Jones  <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>							Branch/Mail Code: Phone Number: 919-541-3112 FAX Number:			